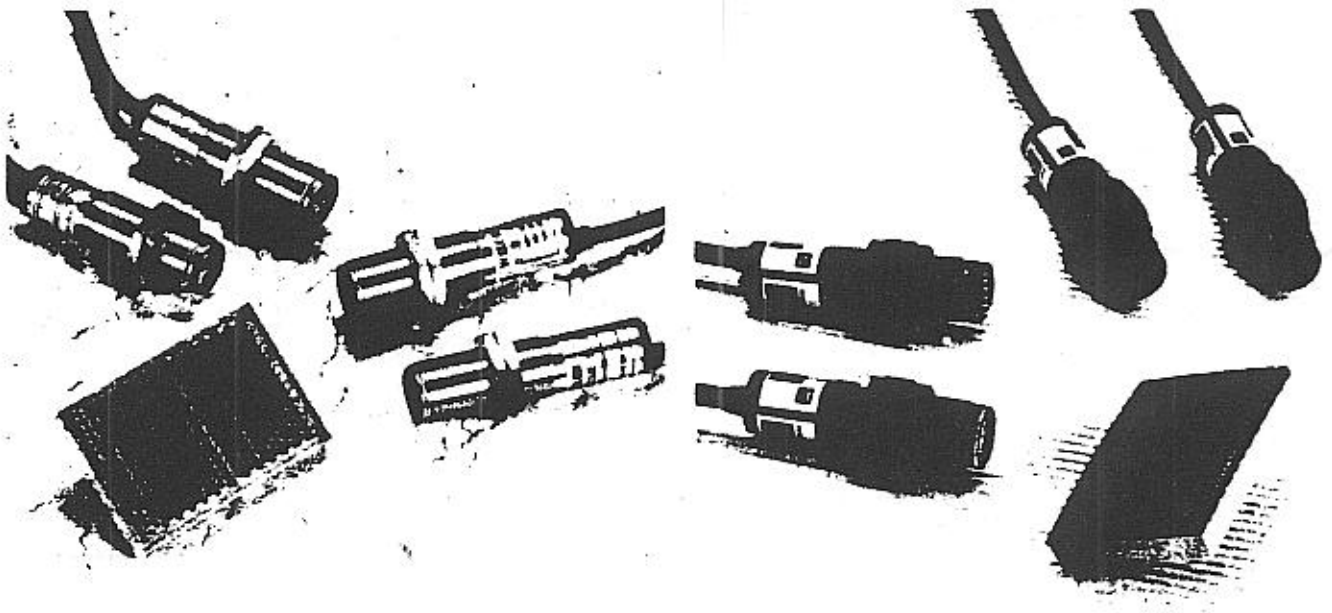
PHOTOELECTRIC SWITCH

FEATURES:

Diameter M18 x 1 mm
Supply voltage 12-30 Vdc
Short circuit protected
Conforming to IP66
Fast response

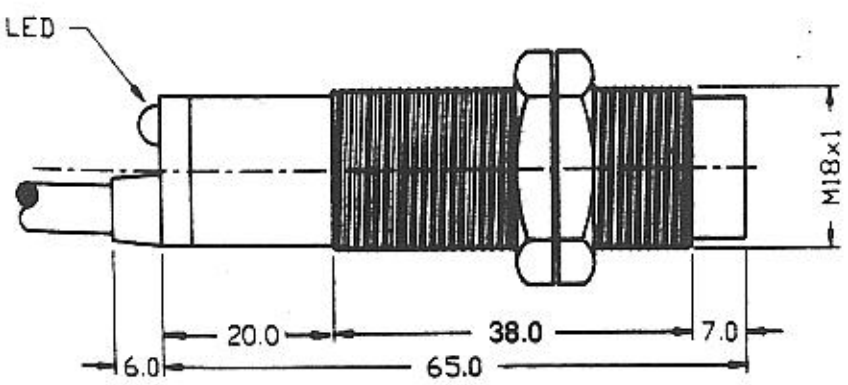


GENERAL SPECIFICATIONS

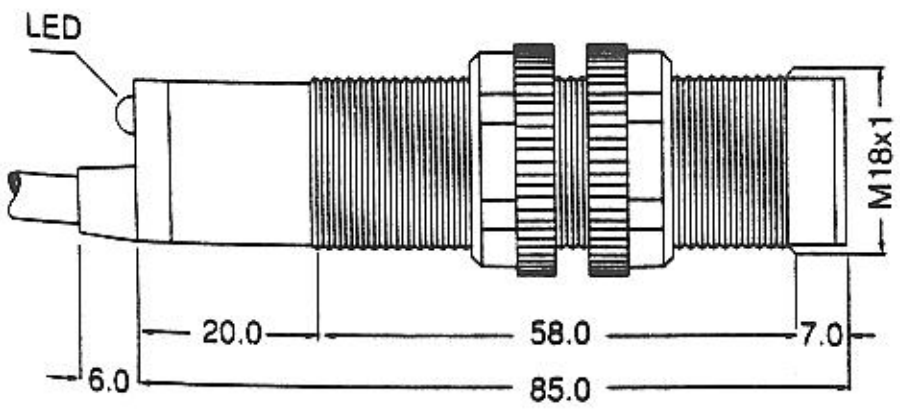
Light Source	Infrared LED (940mm)
Detector	Photo-transistor
Operating Indicator	Red LED, Light when output energized
Sealing	Conforming to IP66 (IEC)
Extraneous Light Immunity	3000 Lux 3000
Housing Materials	Plastic Housing: ABS resin Plastic Nut: PBT Lens: Polycarbonate or PMMA Metal Housing: Brass Metal Nut: Brass
Ambient Humidity	35-85% RH
Storage Temperature	-30℃to +70℃(-22℉ to 158℉)
Cable Length	2m (6.5') Three Conductor Cable
Weight	about 120g (4.3 oz.) for plastic Housing

DIMENSIONS (unit in mm)

WE Series DC Type
WM Series DC Type

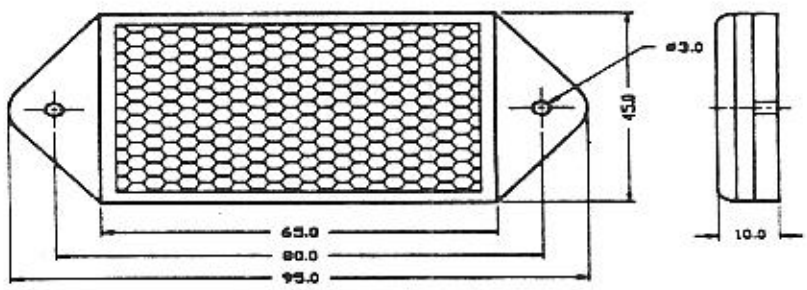


WA Series DC Type

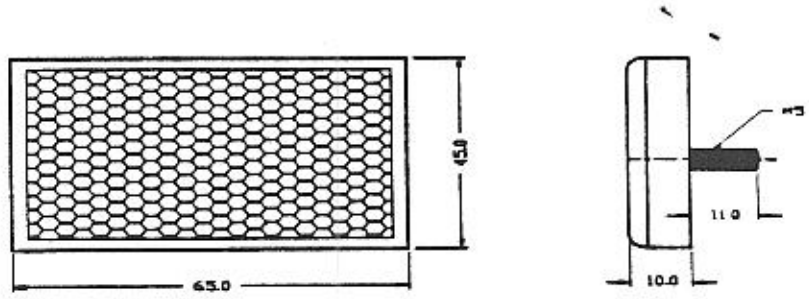


REFLECTOR

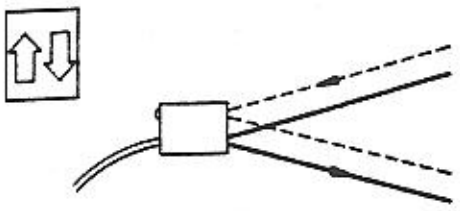
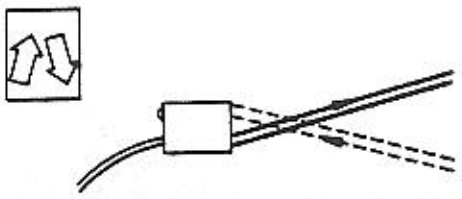
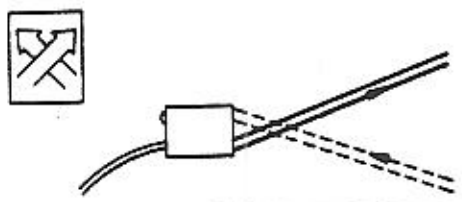
PR-272W



PR-272S



PHOTOELECTRIC SWITCH

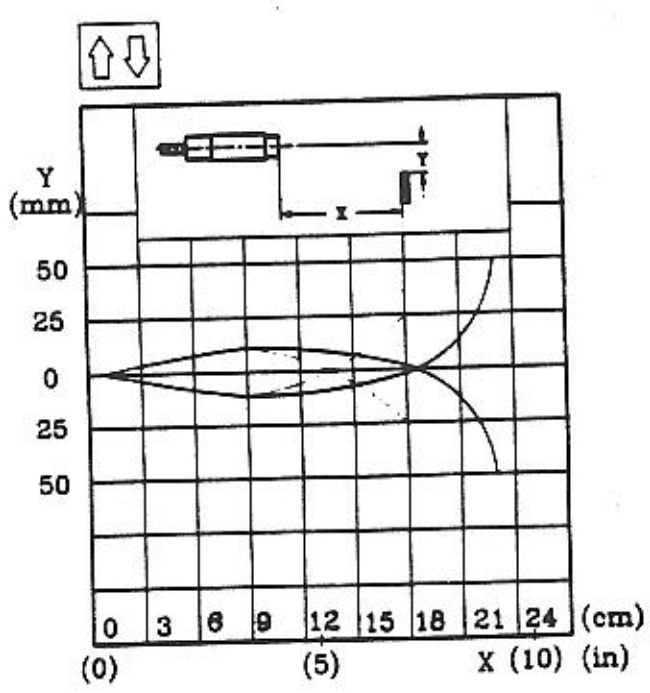
Diffuse Reflective	Diffuse Reflective	Background Suppression
		
· transparent material detection possible · easy to use · fast response	· for restricted area applications · max sensitivity range at 15-40 mm (*3)	· background reflections heavily suppressed · max sensitivity range at 18-22 mm (*3)
0-200 mm (*2)	0-80 mm (*2)	10-30 mm (*2)
see SENSING PERFORMANCE (measured curve & non-detectable region)		
20%	N/N	N/A
Light ON	Light ON	Light ON
250 Hz (2 mS)	250 Hz (2 mS)	250 Hz (2 mS)
20 mS	20 mS	20 mS
12-30 Vdc		
25 mA	25 mA	25 mA
1. output short circuit 2. reverse polarity of supply voltage		
120 mA		
less than 1.5 V (at load current = 120 mA)		
(see WIRING DIAGRAM)		

NPN	PNP	NPN	PNP	NPN	PNP
~~161349~~ WE-R3AL 161321	WE-R4AL	161349 WE-R3BL	WE-R4BL	161357 WE-U3L	WE-U4L

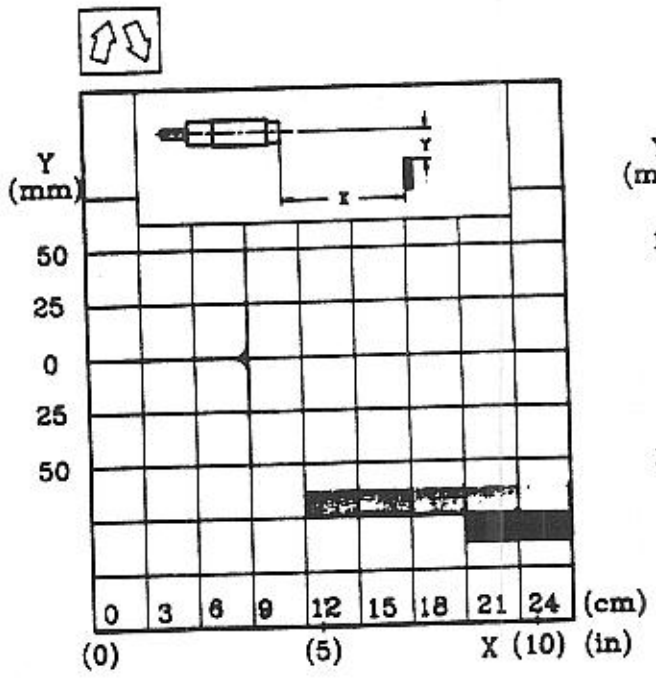
Note: *3 max. sensitivity range is measured with 50mm x 50mm black paper.
*4 WE series: DC type, plastic housing; WM series: DC type, metal housing; WA series: AC type, plastic housing.

SENSING PERFORMANCE

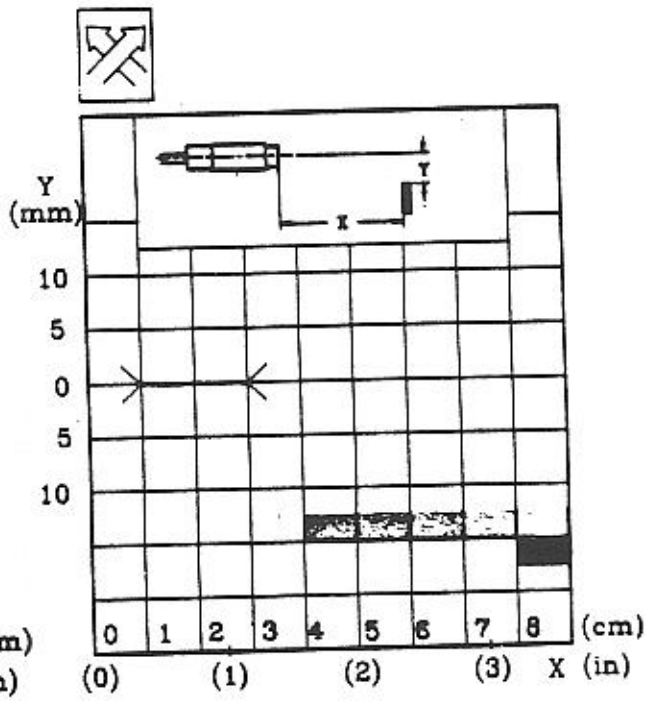
Diffuse Reflective



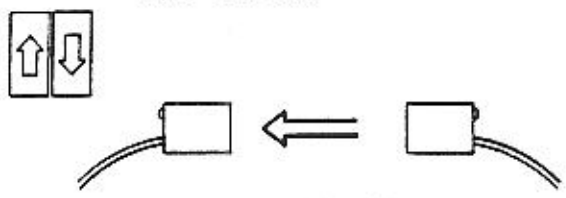
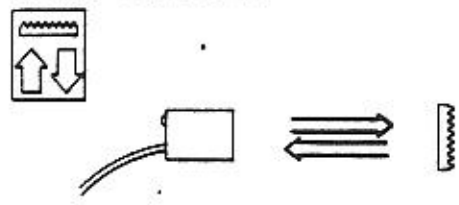
Diffuse Reflective



Background Suppression



PHOTOELECTRIC SWITCH

Operating Principle	Thru-Beam 	Retro-Reflective 
Feature	· long range detection · small object detectable · 1.2 mS response time	· one-side wiring · easy to align · fast response
Detecting distance	0–5 meter	0–2 meter (*1)
Detecting Capability	> 8mm dia. opaque	> 10–40 mm dia. opaque (*2)
Hysteresis	N/N	N/A
Mode of Operation	Dark ON	Dark ON
Max. Switching Rate (Response Time)	400 Hz (1.2 mS)	250 Hz (2 mS)
Power-on Reset Time	20 mS	20 mS
Operating Voltage	12–30 Vdc	
Current Consumption	20 mA (receiver) 25 mA (transmitter)	25 mA
Curcuit Protection	1. output short circuit 2. reverse polarity of supply voltage	
Max. Load Current	120 mA	
Output Residue Voltage	less than 1.5 V (at load current = 120 mA)	
Output Circuit	(see WIRING DIAGRAM)	
	NPN	PNP	NPN	PNP
Model Item *4	161314 WE-T3AD	WE-T4AD	161322 WE-M3D	WE-M4D

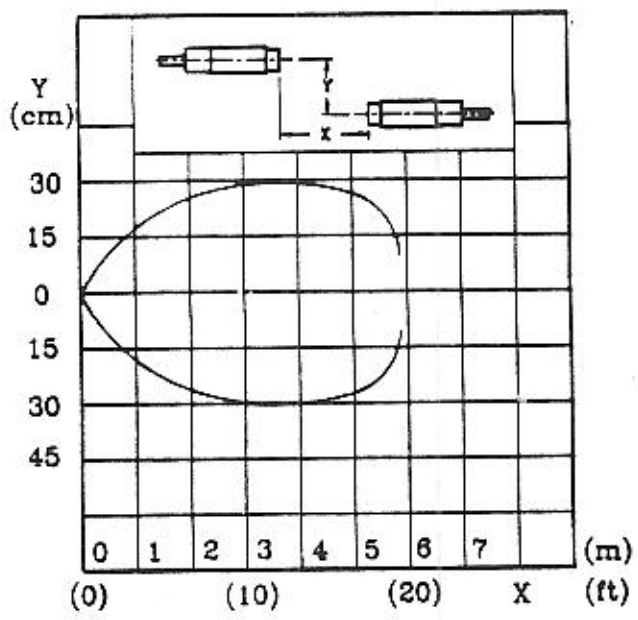
Note: *1 with reflector PR-272S or PR-272W, active area Ar = 2240 mm²
*2 refer to SENSING PERFORMANCE

SENSING PERFORMANCE

measured curve
with 50mm x 50mm white paper
with 100mm x 100mm white paper

non-detectable region
for 200mm x 200mm white paper
with 100mm x 100mm for aluminum foil

Thru-Beam



Retro-Reflective